Journal of Medical Systems

Volume 29, Number 1 February 2005

CONTENTS

Special Issue: Computer-Based Medical Systems
Guest Editors: Tatjana Welzer, Peter Kokol, José Luis Sánchez, and Lorenzo Moreno

Preface 1

Improving the Reliability of Medical Software by Predicting the Dangerous Software Modules 3
Vili Podgorelec, Marjan Heričko, Matjaž B. Jurič, and Ivan Rozman

Transductive Machine Learning for Reliable Medical Diagnostics 13
Matjaž Kukar and Ciril Grošelj

Systems Failure in Hospitals—Using Reason's Model to Predict Problems in a Prescribing Information System 33
R. M. Lederman and C. Parkes

Agent Oriented Approach to Handling Medical Data 45
Marjan Družovec, Tatjana Welzer, and Boštjan Brumen

Diagnostic Process From the Data Quality Point of View 59
Tatjana Welzer, Boštjan Brumen, Izidor Golob, Jose Luis Sanchez, and Marjan Družovec

Protecting Medical Data for Decision-Making Analyses 65
Boštjan Brumen, Tatjana Welzer, Marjan Družovec, Izidor Golob, Hannu Jaakkola, Ivan Rozman, and Jiři Kubalík

Privacy, Public Safety, and Medical Research 81
Margaret G. E. Peterson

Journal of Medical Systems

Volume 29, Number 2 **April 2005**

CONTENTS

Examination of the Effects of Degeneration on Vertebral Artery by Using Neural Network in Cases With Cervical Spondylosis 91
Hüseyin Özdemir, M. Said Berilgen, Selami Serhatlıoğlu, Hüseyin Polat, Uçman Ergün, Necaattin Barışçı, and Fırat Hardalaç

Patient Safety-Related Information Technology Utilization in Urban and Rural Hospitals 103
Robert G. Brooks, Nir Menachemi, Darrell Burke, and Art Clawson

Surgeons' Economic Profiles: Can We Get the "Right" Answers? 111
Eric L. Eisenstein, Charles F. Bethea, Lawrence H. Muhlbaier, Marie Davidian, Eric D. Peterson, Judith A. Stafford, and Daniel B. Mark

The State of Medical Informatics in India: A Roadmap for Optimal Organization 125
Suptendra Nath Sarbadhikari

Does Use of CAM for Specific Health Problems Increase With Reduced Access to Care? 143
Christine S. Ritchie, Stephan F. Gohmann, and W. Paul McKinney

Classification of Aorta Insufficiency and Stenosis Using Neuro-Fuzzy System 155
Necaattin Barışçı, Ergün Topal, Fırat Hardalaç, and İnan Güler

Study on Weighting of Amount of Nursing Care Using Data on Index of Patient's Need for Nursing and System Approach 165
Yumiko Uto and Ichiro Kumamoto

Imaging System for Visualization and Numerical Analysis of Cancer at Stomach and Skin Tissues 179
Sadık Kara, Mustafa Okandan, Fulya Şener, and Mustafa Yıldırım

Creating an Integrated Health Care System in Greece: A Primary Care Perspective 187
K. Souliotis and C. Lionis

A Programmable Iontophoretic Instrument and Its Application for Local Anesthesia Before Surgery in Urology 197
Mahmut Tokmakçi, Oğuz Ekmekçioğlu, and Mustafa Alçi

Journal of Medical Systems

Volume 29, Number 3 **June 2005**

CONTENTS

Prediction of Minor Head Injured Patients Using Logistic Regression and MLP Neural Network 205
Fatih S. Erol, Hadi Uysal, Uçman Ergün, Necaattin Barışçı, Selami Serhatlıoğlu, and Fırat Hardalaç

Combining Neural Network and Genetic Algorithm for Prediction of Lung Sounds 217
İnan Güler, Hüseyin Polat, and Uçman Ergün

Mini Medical Record Application: Annual Register for Flu Shot Vaccinations 233
Myron Hatcher, Irene Heetebry, and Hossein Tabriziani

Classification of EMG Signals Using PCA and FFT 241
Nihal Fatma Güler and Sabri Koçer

Information Subsystem of the SO_4/Cl Ratio as Database for Studying its Influence on Human Health 251
Nives Štambuk-Giljanović and Dragó Štambuk

Multi-Platforms Medical Computer Systems Integration 259
Marina Krol, David L. Reich, and Justin Dupont

Use of Support Vector Machines and Neural Network in Diagnosis of Neuromuscular Disorders 271
Nihal Fatma Güler and Sabri Koçer

Factors That Influence Efficiency in Performing ENT Cases: A Qualitative and Quantitative Analysis 285
Fatma Pakdil and Timothy N. Harwood

Journal of Medical Systems

Volume 29, Number 4 **August 2005**

CONTENTS

Public Health Data Collection and Sharing Using HIPAA Messages 303
Min Wu, Tian Zhao, and Changshan Wu

Database Application of Digital Medical X-rays and Labs: Computerization, Storage, Retrieval, Interpretation, and Distribution 317
Myron Hatcher, Hossein Tabriziani, and Irene Heetebry

TPMG Northern California Appointments and Advice Call Center 325
Patricia Conolly, Leslie Levine, Debra J. Amaral, Bruce H. Fireman, and Tom Driscoll

A Review on Diffusion of Personal Digital Assistants in Healthcare 335
Craig E. Kuziemsky, Francis Laul, and Raymond C. Leung

Web and Computer Telephone-Based Diabetes Education: Lessons Learnt from the Development and Use of a Call Center 343
Gianluca De Leo, Santosh Krishna, Sue Boren, Marco Fato, Ivan Porro, and E. Andrew Balas

Canonical Correlation Analysis of Risk Factors and Clinical Outcomes in Cardiac Surgery 357
Lisa Ridderstolpe, Hans Gill, Magnus Borga, Hans Rutberg, and Hans Åhlfeldt

Electronic Clinical Path System Based on Semistructured Data Model Using Personal Digital Assistant for Onsite Access 379
Osamu Okada, Naoki Ohboshi, Tomohiro Kuroda, Keisuke Nagase, and Hiroyuki Yoshihara

Dolphin Project—Cooperative Regional Clinical System Centered on Clinical Information Center 391
Akira Takada, Jinqiu Guo, Koji Tanaka, Junzo Sato, Muneou Suzuki, Takatoshi Suenaga, Ken Kikuchi, Kenji Araki, and Hiroyuki Yoshihara

The Measurement of Nursing Home Quality: Multilevel Confirmatory Factor Analysis of Panel Data 401
Ning Jackie Zhang and Thomas T. H. Wan

CLAIM (CLinical Accounting InforMation)—An XML-Based Data Exchange Standard for Connecting Electronic Medical Record Systems to Patient Accounting Systems 413
Jinqiu Guo, Akira Takada, Koji Tanaka, Junzo Sato, Muneou Suzuki, Kiwamu Takahashi, Hiroyuki Daimon, Toshiaki Suzuki, Yusei Nakashima, Kenji Araki, and Hiroyuki Yoshihara

Journal of Medical Systems

Volume 29, Number 5 **October 2005**

CONTENTS

Peer-to-Peer Computing in Health-Promoting Voluntary Organizations: A System Design Analysis 425
Magnus Irestig, Niklas Hallberg, Henrik Eriksson, and Toomas Timpka

A New Microcontroller Supervised Thermoelectric Renal Hypothermia System 441
Hakan Işik

Collaborative Technology Use by Healthcare Teams 449
Mowafa Said Househ and Francis Y. Lau

Enhancement of CLAIM (CLinical Accounting InforMation) for a Localized Chinese Version 463
Jinqiu Guo, Akira Takada, Tie Niu, Miao He, Koji Tanaka, Junzo Sato, Muneou Suzuki, Kiwamu Takahashi, Hiroyuki Daimon, Toshiaki Suzuki, Yusei Nakashima, Kenji Araki, and Hiroyuki Yoshihara

Application of Classical and Model-Based Spectral Methods to Describe the State of Alertness in EEG 473
Abdulhamit Subasi

Benign Prostatic Hyperplasia: Cost and Effectiveness of Three Alternative Surgical Treatment Methods Used in a Turkish Hospital 487
Ismail Agirbas, Mehtap Tatar, and Adnan Kisa

Retrospective Economic Evaluation of the Hellenic Air Force Teleconsultation Project 493
G. Labiris, C. Tsitlakidis, and D. Niakas

A New Microcontroller-Based Human Brain Hypothermia System 501
Metin Kapıdere, Raşit Ahıska, and İnan Güler

Modeling and Teaching Techniques for Conceptual and Logical Relational Database Design 513
Cheryl Bagley Thompson and Katherine Sward

Anteroposterior Difference in EEG Sleep Depth Measure is Reduced in Apnea Patients 527
Eero Huupponen, Antti Saastamoinen, Atte Joutsen, Jussi Virkkala, Jarmo Alametsä, Joel Hasan, Alpo Värri, and Sari-Leena Himanen

Clinical Path Modeling in XML for a Web-Based Benchmark Test System for Medication 539
Osamu Okada, Naoki Ohboshi, and Hiroyuki Yoshihara

Enhancement of MML Medical Data Exchange Standard for a Localized Chinese Version 555
Jinqiu Guo, Akira Takada, Tie Niu, Miao He, Koji Tanaka, Junzo Sato, Muneou Suzuki, Toshiaki Suzuki, Yusei Nakashima, Kenji Araki, and Hiroyuki Yoshihara

A Mixture of Experts Network Structure for Breast Cancer Diagnosis 569
Elif Derya Übeyli

Journal of Medical Systems is abstracted or indexed in Artificial Intelligence Abstracts, CINAHL Database, Cumulative Index to Nursing & Allied Health Literature, Computer and Information Systems Abstracts Journal, Computer Science Index, EMBASE/Excerpt Medica, Health and Safety Science Abstracts, INSPEC Information Services, Referativnyi Zhurnal, and The ISI Alerting Services.

Journal of Medical Systems

Volume 29, Number 6 **December 2005**

CONTENTS

Information Subsystem of the Ca/Mg Ratio as a Database for Studying Its Influence on Human Health 581
Nives Štambuk-Giljanović and Drago Štambuk

Wavelet Transformation Based Watermarking Technique for Human Electrocardiogram (ECG) 589
Mehmet Engin, Oğuz Çıdam, and Erkan Zeki Engin

An Evaluation Framework for a Rural Home-Based Telerehabilitation Network 595
George Demiris, Cheryl L. Shigaki, and Laura H. Schopp

Web Based Provider Education for Competency of Scope of Practice (Best Practice): Medicine Department Safe Training Is a Computer Based Review Program (de' medri) 605
Hossein Tabriziani, Myron Hatcher, and Irene Heetebry

Web Based Health Education, E-learning, for Weight Management 611
Irene Heetebry, Myron Hatcher, and Hossein Tabriziani

The Impact of Structured Laboratory Routines in Computerized Medical Records in a Primary Care Service Setting 619
Daniel A. Vardy, Tzachit Simon, Yehuda Limoni, Oded Kuperman, Ira Rabzon, Arnon Cohen, Leah Cohen, and Pesach Shvartzman

Design and Construction of Thermoelectric Footwear Heating System for Illness Feet 627
Hakan Işik

ICASP: An Intensive-Care Acquisition and Signal Processing Integrated Framework 633
Eleftheria J. Siachalou, Ilias K. Kitsas, Konstantinos J. Panoulas, Emmanouil Th. Zadelis, Christos D. Saragiotis, Yannis A. Tolias, Leontios J. Hadjileontiadis, and Stavros M. Panas

Artificial Neural Network Based Epileptic Detection Using Time-Domain and Frequency-Domain Features 647
V. Srinivasan, C. Eswaran, and N. Sriraam

Improving Precise Positioning of Surgical Robotic Instruments by a Three-Side-View Presentation System on Telesurgery 661
Kenta Hori, Tomohiro Kuroda, Hiroshi Oyama, Yasuhiko Ozaki, Takehiko Nakamura, and Takashi Takahashi

Information Subsystem of Total Hardness (Ca + Mg) as a Database for Studying Its Influence on Human Health 671
Nives Štambuk-Giljanović and Drago Štambuk

Examination of Electric Field Effects on Tissues by Using Back Propagation Neural Network 679
Göknur Güler, Fırat Hardalaç, and Aysel Arıcıoğlu

Journal of Medical Systems is abstracted or indexed in Artificial Intelligence Abstracts, CINAHL Database, Cumulative Index to Nursing & Allied Health Literature, Computer and Information Systems Abstracts Journal, Computer Science Index, EMBASE/Excerpt Medica, Health and Safety Science Abstracts, INSPEC Information Services, Referativnyi Zhurnal, and The ISI Alerting Services.